

NEW CHEMICAL FORMULATIONS TO COMBAT CARCINOGENIC CELLS

P PATENTED TECHNOLOGY



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ABSTRACT

The Institute of Organic Synthesis of the University of Alicante has developed a simple and economical synthetic route to obtain a new family of molecules (zwitterions of saturated, monounsaturated, polyunsaturated 2-phosphocoline carboxylic acids and their acid derivatives) that are characterized by their activity against different types of carcinogenic cells.

These compounds have been synthesized at laboratory scale and studies of antitumour activity have been carried out by measuring in vitro the IC50 index of different human tumour cell lines with excellent results.

Companies in the pharmaceutical industry interested in acquiring this technology for commercial exploitation are sought.

TECHNOLOGY ADVANTAGES AND INNOVATIVE ASPECTS

The main advantages of this technology are the following:

- The synthesis of these compounds takes place under mild reaction conditions.
- The reaction conditions used improve the synthetic operation on a larger scale and the execution times are shorter.
- The products obtained do not present neither problems of solubility in water nor toxicity.
- The series of molecules obtained present preventive or curative activity for a great variety of carcinogenic cell lines (IC50 up to $7.06 \pm 1.45 \mu\text{M}$).
- The synthesized zwitterions also present less degradation in the biological environment, which implies a greater therapeutic effect, as well as greater specificity towards the lipidic bi-layer of the cells and its action on them.

MAIN INNOVATIVE ASPECTS OF THE TECHNOLOGY

The main innovative aspect of this technology is the invention of a **new family of zwitterionic molecules** of saturated, monounsaturated, polyunsaturated acids-phosphocholine and their acid derivatives with the general structure (1) - whose characteristics confer the molecule a preventive or curative activity in the micromolar range for a wide variety of carcinogenic cell lines.

In addition, these new chemical formulations have been achieved using a simple and inexpensive synthetic route.

MARKET APPLICATIONS

The current invention is framed as much in the field of the **pharmaceutical chemistry** as in the **medicine area**, with more specific emphasis to those compounds useful as **cytotoxic agents**.

Formula compounds (1) and their pharmaceutically acceptable derivatives such as salts, hydrates or polymorphs, can be used as active species against different types of carcinogenic cells, preferably in the **prevention and/or treatment of cancers** such as those mentioned in the technical description.

COLLABORATION SOUGHT

The research group is looking for companies interested in acquiring this technology for commercial exploitation through:

- Patent licensing agreements.
 - Technical cooperation (R&D projects) to develop new molecules, new applications, carry out industrial scaling, adaptation to the specific needs of companies, etc.
 - Etc.
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